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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/531,176	04/11/2005	Kyoko Miura	016912-0211	4861

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EXAMINER

BLAND, LAYLA D

ART UNIT	PAPER NUMBER
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1623

MAIL DATE	DELIVERY MODE
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08/08/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/531,176

Applicant(s)

MIURA ET AL.

Examiner

Layla Bland

Art Unit

1623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 6) <input type="checkbox"/> Other: _____ |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :5/14/2007, 7/11/2007, 4/11/2005.

DETAILED ACTION

This application is a national stage entry of PCT/JP03/09428, filed July 25, 2003 and claims priority to Japanese Applications No. 2002-295733 filed October 9, 2002, 2003-9365 filed January 17, 2003, and 2003-79595 filed March 24, 2003. Claims 10-20 are pending in this application and are examined on the merits herein.

Specification

The specification is objected to because there is no description of the drawings. Appropriate correction is required.

Claim Rejections - 35 USC § 102

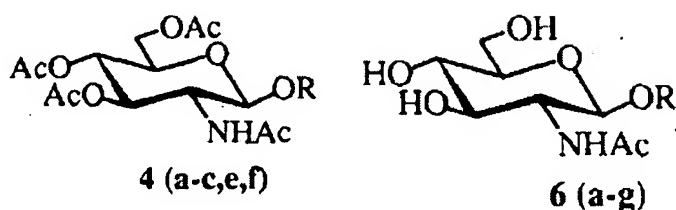
The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 4, 9, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Boullanger et al. (Carbohydrate Research 278 (1995) 91-101):

Boullanger et al. teach compounds 4(a-c, e, f) [Scheme 1] and 6(a-g) [Scheme 2], as shown below. The amphiphilic molecules 6 (a-g) were synthesized in order to obtain compounds with pronounced hydrophilic character [page 93, third paragraph] and are suitable for incorporation into the bilayers of liposomes and for the formation of mixed monolayers [page 95, second paragraph].



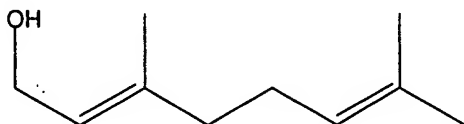
a, R = n-C₈H₁₇, b, R = n-C₉H₁₉, c, R = n-C₁₁H₂₃, d, R = n-C₁₂H₂₅, e, R = n-C₁₄H₂₉, f, R = n-C₁₈H₃₇, g, R = β -cholesteryl. [Scheme 1]

Claims 1, 2, 3, 5, 10, 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Shimizu (JP 02243611, September 1990, English translation).

Shimizu teaches N-acetylglucosamine stearate [Sample (1)] and N-acetylglucosamine palmitate [Sample (3)], which are the compounds of claims 5 and 10, respectively. Chitosan having a deacetylation level of 80% is depolymerized to give a chitosan hydrolysis product with a degree of polymerization of 0-5, and then reacted with palmitic acid chloride [Sample (3)]. Thus, some amount of acetylated and fully depolymerized product is produced and the product shown in claim 10 is present. The sugar-fatty acid adducts are used as cosmetics [page 2, Industrial Application Field, page 9, Application Example 1, and page 11, Application Example 2]. The adducts obtained by the addition of fatty acids to sugars exhibit excellent performance as oil gelling agents and cosmetics that contain these compounds have superior feel and properties [page 4, Means to Solve the problems]. Regarding claim 17, "hyaluronic acid production-promoting agent" is a recitation of the inherent properties of the N-acetylglucosamine derivative and not further limiting.

Claims 1-3, 11, 15, 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Noriaki et al. (JP 10-139793, May 1998).

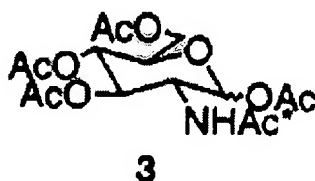
Noriaki et al. teach perfume glycosides of formula III [abstract] wherein R can be geraniol [abstract, Examples 4-6, paragraphs 0045-0049]. Geraniol has the following structure:



Thus, when R = geraniol, as exemplified in Examples 4-6, the compound of formula III is that of claim 11. The perfume glycosides are manufactured by the reaction of tetra-acetylglucosamine with the perfume compound, followed by deacetylation to give the N-acetylglucosamine monosaccharide [0019]. The fully acetylated product is necessarily an intermediate in the reaction; therefore, the compound of claim 15 is present as an intermediate in the reaction and the limitations of claim 15 are also met. The perfume glycosides were applied to the skin as colognes [0064-0065]. Regarding claim 17, "hyaluronic acid production-promoting agent" is a recitation of the inherent properties of the N-acetylglucosamine derivative and not further limiting.

Claim 18 is rejected under 35 U.S.C. 102(b) as being anticipated by Hare et al. (Biochemistry 1994, 33, 10137-10148).

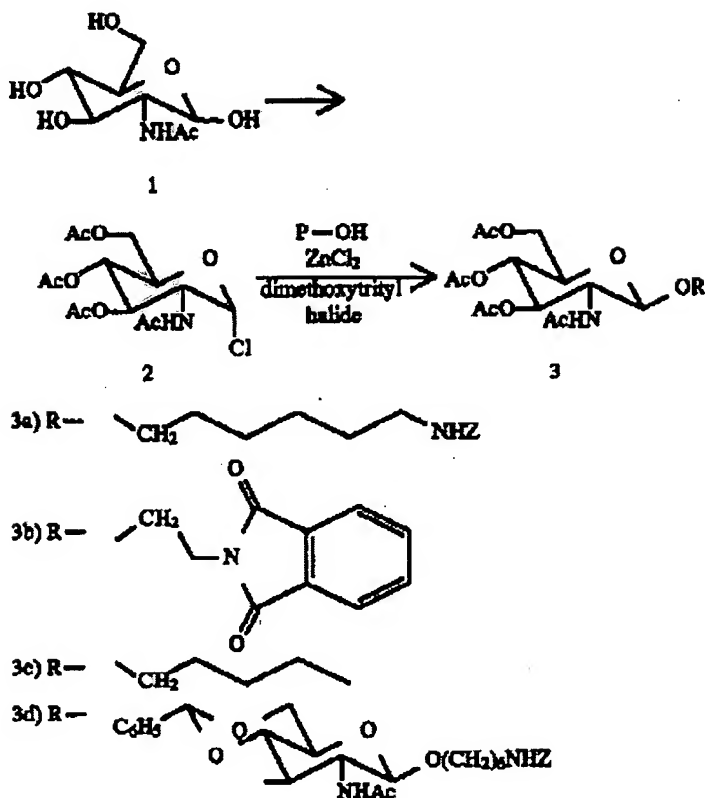
Hare et al. teach the following compound:



This compound meets the limitations of claim 18 when R⁹ is an acyl group having 2 carbon atoms. "Hyaluronic acid production-promoting agent" is a recitation of the inherent properties of the N-acetylglucosamine derivative and not further limiting.

Claims 1, 3, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Schmidt et al. (U.S. 5,696,246, December 9, 1997, PTO-1449 submitted April 11, 2005).

Schmidt et al. teach the following compound 3c, which is the compound of claim 13:



Thus, the limitations of claims 1, 3 and 13 are met by Schmidt et al.

Claims 1, 3, 7, 8, 12 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Lambricht et al. (Biochemistry 1985, 24, 910-914).

Lambricht et al. teach methyl-, ethyl-, propyl-, butyl-, and pentyl-GlcNAc (N-acetylglucosamine), which meet the limitations of claims 1, 3, 7 and 8, and which were prepared by the reaction of 2-acetamido-3,4,6,-tri-O-acetyl-2-deoxy- α -D-glucopyranosyl chloride with the appropriate alcohol, followed by deacetylation [page 911, Material and Methods and page 912, Table 1]. The fully acetylated products are intermediates in the

reaction and are necessarily present; therefore the limitations of claims 12 and 13 are also met by Lambright et al.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boullanger et al. (Carbohydrate Research 278 (1995) 91-101) and Shimizu (JP 02243611, September 1990, English translation) in view of Anderson (WO 00/51553, September 8, 2000).

Boullanger et al. and Shimizu teach compounds having potential for monolayer formation and superior feel when used in cosmetics, respectively, as set forth above.

Boullanger et al. and Shimizu do not teach the compound having both a fatty acid moiety at position 6 and a fatty alcohol moiety at position 1.

Anderson teaches skin cosmetics that, when applied to the skin, form a layer of material that adheres to the skin [page 1, lines 21-25]. The layer can be a monolayer including amphipathic molecules [page 1, lines 27-30]. The molecular monolayer can include a monomer that when activated, polymerizes to form the molecular monolayer [page 2, lines 5-96].

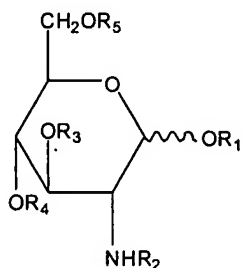
It would have been obvious to one of ordinary skill in the art at the time the invention was made to prepare the compound of formula (6), having both a fatty acid moiety and a fatty alcohol moiety. Boullanger et al. teach a molecule having the fatty alcohol moiety, which is useful for forming monolayers. Shimizu teaches a molecule having the fatty acid moiety, which is a superior ingredient for cosmetics. Anderson demonstrates that monolayers are used in cosmetics. The molecules of Boullanger et al. and Shimizu both possess properties that are desirable for cosmetic use, so one skilled in the art could conceive of combining the two molecules to give a product that would be predicted to be desirable for cosmetic use.

Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hare et al. (Biochemistry 1994, 33, 10137-10148) and Schmidt et al. (U.S. 5,696,246, December 9, 1997, PTO-1449 submitted April 11, 2005) in view of Mishima et al. (JP 62036306, February 1987, English translation) and Oyama et al. (EP 0402776, December 1990).

Hare et al. and Schmidt et al. teach compounds as set forth above.

Hare et al. and Schmidt et al. do not teach skin preparations comprising said compounds.

Mishima et al. teach a skin-beautifying cosmetic comprising a glucosamine derivative of the following formula:



wherein R_1 , R_2 , R_3 , R_4 and R_5 represent hydrogen or acyl groups with at least one of them being an acyl group [page 5, first paragraph]. Acyl derivatives of glucosamine demonstrate strong reversible whitening effects on pigment cells [page 4, lines 12-15]. Specific examples include tetra-O-acetylglucosamine hydrochloride, N-octanoylglucosamine and others [page 6, Test Substances].

Oyama et al. teach N-acetyl-1,3,4,6-tetra-O-acetylmannosamine and N-acetyl-1,3,4,6-tetra-O-acetylgalactosamine as melanogenesis inhibitors [page 3, lines 12-22]. The compounds are applied to the skin as creams, lotions, or ointments [Examples 1-5]. Oyama et al. also teach that N-acetylamino sugars or N-alkylamino sugars are known for moisturizing, softening and skin-activating [page 2, lines 33-35].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to prepare skin preparations comprising N-acetylglucosamine derivatives. The claimed compounds are known in the art; acyl derivatives of glucosamine are known in the art to be useful for skin-whitening; and acylated amino sugars which are very similar in structure to those claimed are also known in the art for skin preparations. One of ordinary skill in the art could conceive of combining these teachings to achieve a predictable result that the claimed compounds are useful in skin preparations.

A reference is good not only for what it teaches by direct anticipation but also for what one of ordinary skill in the art might reasonably infer from the teachings. (*In re Opprecht* 12 USPQ 2d 1235, 1236 (Fed Cir. 1989); *In re Bode* 193 USPQ 12 (CCPA) 1976). In light of the forgoing discussion, the Examiner concludes that the subject matter defined by the instant claims would have been obvious within the meaning of 35 USC 103(a). From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

Conclusion

No claims are allowed in this application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Layla Bland whose telephone number is (571) 272-9572. The examiner can normally be reached on M-R 8:00AM-5:00PM UST.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shaojia Anna Jiang can be reached on (571) 272-0627. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1623

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Layla Bland
Patent Examiner
Art Unit 1623
July 31, 2007

Shaojia Anna Jiang


Supervisory Patent Examiner
Art Unit 1623
July 31, 2007